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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,408	12/02/2004	Hiroshi Sekiguchi	123752	2835
25944	7590	08/09/2006	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			DO, ROBERT C	
			ART UNIT	PAPER NUMBER
			2851	

DATE MAILED: 08/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/516,408

Applicant(s)

SEKIGUCHI ET AL.

Examiner

Robert C. Do

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/2/04, 3/21/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

Figures 9, 10 and 11 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1, and 9 – 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee (U.S Patent Number 5,768,014).

Lee discloses all of the features of the invention as follows:

- A flat base part (Fig. 6, 30).
- A plurality of prisms (30a) formed on an entrance surface.

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- Each Prism having a refraction facet that refracts light rays and a total-reflection facet that totally reflects lights rays. (A refraction facet and a total-reflection facet are known to one of ordinary skill in the art as inherent qualities of a prism used on a Fresnel Lens Sheet.)
- A plurality of V grooves (36a) formed in an exit surface of the base part.
- A plurality of wedge-shaped light absorbing parts (36).
- At least some of the light rays refracted and totally reflected by prisms are reflected by the inclined surfaces that are interfaces between the base part and the light absorbing parts embedded in the grooves of the base part so that light rays travel outside through regions of the exit surface of the base part the regions being placed between adjacent light absorbing parts. (Fig. 6)
- Two inclined surfaces of each of the light absorbing parts are symmetrical with respect to a direction perpendicular to the base part.
- A screen comprising a Fresnel lens sheet and a lenticular sheet placed on a viewer's side of the Fresnel lens sheet to diffuse light passed through the Fresnel lens sheet (column 2, lines 15-20).
- A rear projection screen with an anti-reflection layer formed on either entrance surface of the Fresnel lens sheet or the exit surface (column 4, lines 20-25).

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- A rear projection screen provided with the Fresnel lens sheet and a projector that projects an image light rays onto the rear projection screen (column 2 lines 22-27).
- A rear projection screen provided with the Fresnel lens sheet, a lenticular lens sheet and a projector that projects an image light rays onto the rear projection screen (column 2 lines 22-27).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2, 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over lee in view of Goto et al. (Japanese Publication Number 2003-050307).

Lee teaches the claimed elements shown above.

Lee does not teach the following:

- A condition expressed by: $\tan^{-1} (2D/W_1) \geq \sin^{-1} (N_1/N_2)$.
- A condition expressed by: $\tan^{-1} (D/W_3) \geq \sin^{-1} (N_1/N_2)$.
- A condition expressed by: $\tan^{-1} (D/W_4) \geq \sin^{-1} (N_1/N_2)$.

However, Goto teaches the following:

- A condition expressed by: $\tan^{-1} (2D/W_1) \geq \sin^{-1} (N_1/N_2)$ (In the Japanese application it is shown that $.23 < N_1/N_2 < .996$ and Lee teaches in table 1 that a Depth of .520mm with and angle of 30° will give us a W_1 of .6. So the \tan^{-1} of $(2D/W_1)$ is equal to 66.5. So if (N_1/N_2) is .5, the $\sin^{-1} (.5)$ is equal to 30. Therefore it is shown $66.5 \geq 30$ meeting the claimed expression.)
- A condition expressed by: $\tan^{-1} (D/W_3) \geq \sin^{-1} (N_1/N_2)$ (In the Japanese application it is shown that $.23 < N_1/N_2 < .996$ and Lee teaches in table 1 that a Depth of .520mm with and angle of 30° will give us a W_1 of .6. So the \tan^{-1} of (D/W_1) is equal to 48.9. So if (N_1/N_2) is .5, the $\sin^{-1} (.5)$ is equal to 30. Therefore it is shown $48.9 \geq 30$ meeting the claimed expression.)
- A condition expressed by: $\tan^{-1} (D/W_4) \geq \sin^{-1} (N_1/N_2)$ (In the Japanese application it is shown that $.23 < N_1/N_2 < .996$ and Lee teaches in table 1 that a Depth of .520mm with and angle of 30° will give us a W_1 of .6. So the \tan^{-1} of (D/W_1) is equal to 48.9. So if (N_1/N_2) is .5, the $\sin^{-1} (.5)$ is equal to 30. Therefore it is shown $48.9 \geq 30$ meeting the claimed expression.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use values of N_1 and N_2 as taught by Goto for the

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Fresnel lens sheet of Lee for optimizing the diffusion characteristics and thus contrast reduction is suppressed.

Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Wolf (U.S. Patent Number 6,700,713).

Lee teaches all of the claimed elements shown above.

Lee does not teach the following:

- The Fresnel lens sheet where a ratio of W_1/D is in the range of .05 to .5
(Lee teaches of an expression $W_1 = 2D \tan \theta$. Using this equation we can pick a Depth, D, of .5 and choose an angle, θ , of 10° we get a Width, W_1 , of .08. Using the numbers found the ratio of W_1/D is equal to .17 is within the claimed range of .05 to .5)
- The Fresnel lens sheet where a ratio of W_3/D is in a range of .025 to .25.
(Lee teaches of an expression $W_3 = 2D \tan \theta$. Using this equation we can pick a Depth, D, of .5 and choose an angle, θ , of 10° we get a Width, W_1 , of .08. Using the numbers found the ratio of W_3/D is equal to .17 is within the claimed range of .025 to .25).

However Wolfe teaches:

- The Fresnel lens sheet where a ratio of W_1/D is in the range of .05 to .5
(Lee teaches of an expression $W_1 = 2D \tan \theta$. Wolfe teaches that incident angles up to 35 degrees are projected onto the screen. (Column 3, lines 36-40) So using this equation from Lee we can pick a Depth, D, of .5, and

choose an angle, θ , of 10° (Wolfe teaches of incident angles up to 35 degrees) we get a Width, W_1 , of .08. Using the numbers found the ratio of W_1/D is equal to .17 is within the claimed range of .05 to .5)

- The Fresnel lens sheet where a ratio of W_3/D is in a range of .025 to .25. (Lee teaches of an expression $W_1 = 2D \tan \theta$. Wolfe teaches that incident angles up to 35 degrees are projected onto the screen. (Column 3, lines 36-40) So using this equation from Lee we can pick a Depth, D , of .5, and choose an angle, θ , of 10° (Wolfe teaches of incident angles up to 35 degrees) we get a Width, W_3 , of .08. Using the numbers found the ratio of W_3/D is equal to .17 is within the claimed range of .025 to .25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use incident angles as taught by Wolfe in the equation of Lee in order to find a desired width so as to provide the lens that collimates projected images over a wide range of dimensions of display screens for viewing the projected imaged, and further saving cost to accommodate a wide range of screen sizes.

Claims 6 through 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee.

Lee discloses all the claimed invention except for light absorbing parts that have a uniform absorptance and an optical density per $1 \mu\text{m}$ in thickness of the light absorbing parts is in a range of .1 to 1.2.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the light absorbing parts of Lee have a uniform absorptance and an optical density per 1 μm in thickness of the light absorbing parts is in a range of .1 to 1.2 for the purpose of utilizing an optimum absorption range while minimizing material costs. The applicant should note that it has been held that where the general working conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert C. Do whose telephone number is (571)272-1387. The examiner can normally be reached on Monday Through Friday, 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on (571)272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RCD



DIANE LEE
SUPERVISORY PATENT EXAMINER